WHAT IS CLAIMED IS:

1. An integrated circuit comprising a contact structure of a semiconductor device, the contact structure comprising:

an active region, the active region having been defined using a mask provided on a substrate; and

an isolation region adjacent the active region and comprising a field oxide:

the field oxide having been grown by exposure of the substrate to a thermal process and an oxygen-containing gas;

a film having been formed on a top surface of the mask during exposure to the thermal process and the oxygen-containing gas;

a dry etching process having been performed to substantially remove the film from the top surface of the mask and to remove a top portion of the field oxide in the isolation region; and

a wet etching process having been performed to substantially remove any portion of the mask remaining after the dry etching process.

2. The integrated circuit of Claim 1, wherein the film has been substantially removed from the top surface of the mask and the top portion of the field oxide in the isolation region has been removed independent of any wet etching process.

3. The integrated circuit of Claim 1, wherein the dry etching process to substantially remove the film from the top surface of the mask and to remove the top portion of the field oxide in the isolation region comprises a plasma etching process.

4. The integrated circuit of Claim 3, wherein the plasma etching process has been performed with a bottom electrode temperature of -15°C, a pressure of 700mtorr, and a radio frequency (RF) power of 125Watts for a duration of eighteen seconds using a gas comprising CF_4 (Freon 14).

5. The integrated circuit of Claim 1, wherein the dry etching process to substantially remove the film from the top surface of the mask and to remove the top portion of the field oxide in the isolation region comprises a substantially anisotropic dry etching process, the dry etching process etching the film and the top portion of the field oxide at substantially the same rate.

6. The integrated circuit of Claim 1, wherein the field oxide extends underneath the mask into the active region, pushing up an edge of the mask and forming a "bird's beak" region of the field oxide, a recess having been formed near the bird's beak region of the field oxide during the dry etching process, the recess having a depth as a result of the dry etching process that is less than if a wet etching process had been used to substantially remove the film from the top surface of the mask and to remove the top portion of the field oxide in the isolation region.

7. The integrated circuit of Claim 6, wherein performing the dry etching process rather than a wet etching process to substantially remove the film from the top surface of the mask and to remove the top portion of the field oxide in the isolation region substantially reduces etch-back or undercutting of the field oxide in the bird's beak region.

8. The integrated circuit of Claim 6, wherein the depth of the recess formed during the dry etching process is at least approximately forty percent less than if a wet etching process had been used to substantially remove the film from the top surface of the mask and to remove the top portion of the field oxide in the isolation region.

9. The integrated circuit of Claim 1, wherein the integrated circuit comprises one or more filaments formed between the contact structure and one or more other contact structures, the filaments being fewer in number than if a wet etching process had been used to substantially remove the film from the top surface of the mask and to remove the top portion of the field oxide in the isolation region.

10. The integrated circuit of Claim 1, wherein:

the field oxide comprises silicon dioxide;

the mask comprises silicon nitride;

the film comprises oxynitride; and

the wet etching process to substantially remove any portion of the mask remaining after the dry etching process comprises exposure to phosphoric acid.

11. A method for improving a field oxide profile of an isolation region associated with a contact structure of a semiconductor device within an integrated circuit, comprising:

providing a mask on a substrate to define an active region of the semiconductor device;

exposing the substrate to a thermal process and an oxygen-containing gas to grow a field oxide to define an isolation region adjacent the active region and comprising the field oxide, a film being formed on a top surface of the mask during exposure to the thermal process and the oxygen-containing gas;

performing a dry etching process to substantially remove the film from the top surface of the mask and to remove a top portion of the field oxide in the isolation region; and

performing a wet etching process to substantially remove any portion of the mask remaining after the dry etching process.

12. The method of Claim 11, wherein substantially removing the film from the top surface of the mask and removing the top portion of the field oxide in the isolation region occur independent of any wet etching process.

13. The method of Claim 11, wherein the dry etching process to substantially remove the film from the top surface of the mask and to remove the top portion of the field oxide in the isolation region comprises a plasma etching process.

14. The method of Claim 13, wherein the plasma etching process has been performed with a bottom electrode temperature of -15°C, a pressure of 700mtorr, and a radio frequency (RF) power of 125Watts for a duration of eighteen seconds using a gas comprising CF_4 (Freon 14).

15. The method of Claim 11, wherein the dry etching process to substantially remove the film from the top surface of the mask and to remove the top portion of the field oxide in the isolation region comprises a substantially anisotropic dry etching process, the dry etching process etching the film and the top portion of the field oxide at substantially the same rate.

16. The method of Claim 11, wherein the grown field oxide extends underneath the mask into the active region, pushing up an edge of the mask and forming a "bird's beak" region of the field oxide, a recess being formed near the bird's beak region of the field oxide during the dry etching process, the recess having a depth as a result of the dry etching process that is less than if a wet etching process had been used to substantially remove the film from the top surface of the mask and to remove the top portion of the field oxide in the isolation region.

17. The method of Claim 16, wherein performing the dry etching process rather than a wet etching process to substantially remove the film from the top surface of the mask and to remove the top portion of the field oxide in the isolation region substantially reduces etch-back or undercutting of the field oxide in the bird's beak region.

18. The method of Claim 16, wherein the depth of the recess formed during the dry etching process is at least approximately forty percent less than if the wet etching process had been used to substantially remove the film from the top surface of the mask and to remove the top portion of the field oxide in the isolation region.

19. The method of Claim 11, wherein one or more filaments are formed between the contact structure and one or more other contact structures, the filaments being fewer in number than if a wet etching process had been used to substantially remove the film from the top surface of the mask and to remove the top portion of the field oxide in the isolation region.

20. The method of Claim 11, wherein:

the field oxide comprises silicon dioxide;

the mask comprises silicon nitride;

the film comprises oxynitride; and

the wet etching process to substantially remove any portion of the mask remaining after the dry etching process comprises exposure to phosphoric acid.

21. An integrated circuit comprising a contact structure of a semiconductor device, the contact structure comprising:

an active region, the active region having been defined using a mask provided on a substrate; and

an isolation region adjacent the active region and comprising a field oxide:

the field oxide having been grown by exposure of the substrate to a thermal process and an oxygen-containing gas, the field oxide extending underneath the mask into the active region, pushing up an edge of the mask and forming a "bird's beak" region of the field oxide;

a film having been formed on a top surface of the mask during exposure to the thermal process and the oxygen-containing gas;

a dry plasma etching process having been performed to substantially remove the film from the top surface of the mask and to remove a top portion of the field oxide in the isolation region, the film having been substantially removed from the top surface of the mask and the top portion of the field oxide in the isolation region having been removed independent of any wet etching process, performance of the dry plasma etching process rather than a wet etching process to substantially remove the film from the top surface of the mask and to remove the top portion of the field oxide in the isolation region having substantially reduced etch-back or undercutting of the field oxide in the bird's beak region such that a recess formed near the bird's beak region of the field oxide during the dry plasma etching process is smaller than if a wet etching process had been used to substantially remove the film from the top surface of the mask and to remove the top portion of the field oxide in the isolation region; and

a wet etching process having been performed to substantially remove any portion of the mask remaining after the dry plasma etching process.

22. A method for improving a field oxide profile of an isolation region associated with a contact structure of a semiconductor device within an integrated circuit, comprising:

providing a mask on a substrate to define an active region of the semiconductor device;

exposing the substrate to a thermal process and an oxygen-containing gas to grow a field oxide to define an isolation region adjacent the active region and comprising the field oxide, the field oxide extending underneath the mask into the active region, pushing up an edge of the mask and forming a "bird's beak" region of the field oxide, a film being formed on a top surface of the mask during exposure to the thermal process and the oxygen-containing gas;

performing a dry plasma etching process to substantially remove the film from the top surface of the mask and to remove a top portion of the field oxide in the isolation region, the film being substantially removed from the top surface of the mask and the top portion of the field oxide in the isolation region being removed independent of any wet etching process, performance of the dry plasma etching process rather than a wet etching process to substantially remove the film from the top surface of the mask and to remove the top portion of the field oxide in the isolation region substantially reducing etch-back or undercutting of the field oxide in the bird's beak region such that a recess formed near the bird's beak region of the field oxide during the dry plasma etching process is smaller than if a wet etching process had been used to substantially remove the film from the top surface of the mask and to remove the top portion of the field oxide in the isolation region; and

performing a wet etching process to substantially remove any portion of the mask remaining after the dry plasma etching process.